The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Thomas S. Burack, Commissioner

November 22, 2016

Subject: Sampling for Per- and Polyfluoroakyl Substances/Perfluorinated Chemicals (PFASs/PFCs) at Contaminated Sites

Dear Stakeholders:

This letter is to notify you that the Department of Environmental Services (NHDES), Hazardous Waste Remediation Bure au is requesting sampling for per- and polyfluoroalkyl substances (PFASs), commonly referred to as perfluorinated chemicals (PFCs) , as part of groundwater management permits and the investigation of certain contaminated sites. Please plan to include PFCs in one of your sampling rounds conducted in 2017, or at the latest in 2018. The following contaminated sites should include PFCs as part of their groundwater sampling programs:

- Active hazardous waste sites , including but not limited to sites with active groundwater management permits
- Sites with ongoing e nvironmental site evaluation and where hazardous wastes or hazardous substances are suspected to be have been released
- Sites with a history indicating the industrial processes that may have used PFC - containing products , or facilities that may have used c ommercial products containing PFCs
- Unlined landfills
- Lined landfills
- Sites associated with groundwater release detection permits
- Fire training areas, airports or sites where significant quantities of aqueous film forming foam (AFFF) may have been applied

PFCs are a family of man-made compounds that do not naturally occur in the environment. They have a large number of industrial uses and are found in many commercial products because of their properties to resist heat, oil, grease and water . Once released to the environment, PFCs are persistent and do not biodegrade or breakdown. New Hampshire and several other northeast states are dealing with several sites where there have been widespread PFC impacts on drinking water supplies.

On May 19, 2016 the U.S. Environ mental Protection Agency (USEPA) issued drinking water lifetime health advisories for two PFCs, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). After a review of USEPA's information , on May 31, 2016 NHDES filed an emergency rule to establish the health advisories as Ambient Groundwater Quality Standard s (AGQS). NHDES set three groundwater standards: 70 parts per trillion (ppt) for PFOA, 70 ppt for PFOS and 70 ppt for PFOA and PFOS combined, where the chemicals are found together. After completing the regular rulemaking process, these rules became permanent on October 22, 2016.

NHDES will be conducting outreach for facility/property owners, consultants, analytical laboratories and other parties interested in obtaining additional information. The topics will include:

- Background on PFCs use, fate and transport
- Sampling protocols specific to PFCs
- Analytical methods, detection limits and electronic reporting (i.e., electronic data submittals to NHDES' Environmental Monitoring Database (EMD))
- Case studies/experience to date
- Health effects
- Treatment/remediation technologies

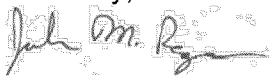
Because of the potential presence of PFCs in common consumer products and in equipment typically used to collect groundwater samples, special handling and care must be taken when collecting samples for PFC analysis. For example, Teflon® tubing, low density polyethylene (LDPE) sample containers, and chemical ice packs should be avoided; and field personnel should avoid wearing clothing or footwear made of synthetic water resistant and/or stain resistant materials and avoid using waterproof paper and adhesive paper products. More information can be found in the attached Sample Collection Guidance.

We will be sending you additional information related to analytical methods and the required analyte list by March 31, 2017. However, for your planning purposes, an analytical laboratory should be selected that will report both linear and branched isomers of PFOA, in accordance with the recently published USEPA Technical Advisory, https://www.epa.gov/sites/production/files/2016-09/documents/pfoa-technical-advisory.pdf.

NHDES appreciates your anticipated compliance with this request for additional sampling and your cooperation in evaluating the extent of PFC impacts on New Hampshire's environment, particularly on drinking water supplies. PFCs are "emerging" contaminants, and collectively we will continue to learn more about where they occur, and improve how we address any public health and environmental impacts. You can find information relative to PFCs at NHDES 's website http://des.nh.gov/organization/commissioner/pfoa.htm and at the New Hampshire Health and Human Services' website http://www.dhhs.nh.gov/dphs/pfcs/index.htm.

We will keep you informed on the upcoming outreach and training. If you have any questions, please contact me.

Sincerely,



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Attm: PFC Sample Collection Guidance

PerFluorinated Compound (PFC) Sample Collection Guidance

The purpose of this document is to provide guidance on groundwater sampling protocols when collecting a sample(s) for PFCs. Detection of these compounds at very low levels can be influenced by materials that are present at the sampling site , materials used by the sampling agent, or sample container handling practices.

The following table provides a summary of items that are likely to contain PFCs (i.e. prohibited items) and therefore should not be used by the sampling agent at the sampling site.

Category	Prohibited Items	Allowable Items
Pumps and Tubing	Teflon® and other fluoropolymer containing materials	High-density polyethylene (HDPE), low density polyethylene (LDPE) , or silicone tubing, peristaltic pump or stainless steel submersible pump
Decontamination	Decon 90	Alconox® or Liquinox®, potable water followed by deionized rinse.
Sample Storage and Preservation	LDPE or glass bottles, PTFE-or Teflon®-lined caps, chemical ice packs	Laboratory-provided sample container -*preferred*; or, HDPE or polypropylene bottles, regular ice
Field Documentation	Waterproof/treated paper or field books, plastic clipboards, non-Sharpie® markers, Post-It® and other adhesive paper products	Plain Paper, metal clipboard, Sharpies®, pens
Clothing	Clothing or boots made of or with Gore-Tex™ or other synthetic water resistant and/or stain resistant materials, Tyvek® material	Synthetic or cotton material, previously laundered clothing (preferably previously washed greater than six times) without the use of fabric softeners
Personal Care Products (for day of sample collection)	Cosmetics, moisturizers, hand cream and other related products	Suncreens: Alba Organics Natural Yes to Cucumbers Aubrey Organics Jason Natural Sun Block Kiss My Face Baby-safe sunscreens ('free' or 'natural) Insect Repellents: Jason Natural Quit Bugging Me Repel Lemon Eucalyptus Herbal Armor California Baby Natural Bug Spray BabyGanics Sunscreen and Insect Repellents: Avon Skin So Soft Bug Guard-SPF 30
Food and Beverage	Pre-packaged food, fast food wrappers or containers	Bottled water or hydration drinks

For samples collected from monitoring wells

- When feasible, use single -use, disposable polyethylene or silicone materials (tubing, bailers, etc.) for monitoring well purging and sampling equipment.
- When reuse of materials or sampling equipment across multiple sampling locations is necessary, follow project decontamination protocols with allowed materials identified in the table above, and incorporate collection of equipment rinseate blanks into sampling program, as appropriate.
- When using positive displacement/submersible pump sampli ng equipment, familiarize yourself with the sampling pump/accessory equipment specifications to confirm that device components are not made of nor contain Teflon® or PTFE.

For samples collected during production well pumping tests

- If feasible, do not use Teflon® tape or pipe thread paste on pipe fittings or sampling tap threads on the pump discharge pipe.
- As with all other sample parameters, the sample for PFCs should be collected at the last hour (or hours) of the pumping portion of the testing program.
- Discharge water should be p urged through the sampling tap on the discharge p ipe for a minimum of 20 minutes prior to collection of samples.

For samples collected from active production wells

- If feasible, avoid contact with any Teflon ® tape or pipe thread paste on pipe fittings or sampling tap threads on the water supply discharge pipe.
- The sample for PFCs should be collected while the production well pump is operating, and, preferably, has been operating for at least one hour.
- Discharge water should be p urged through the sampling tap on the discharge pipe for a minimum of 20 minutes prior to collection of samples.

Sample collection method/sequence

- Using new nitrile gloves collect the sample for PFCs ***first***, prior to collecting samples f or any other parameters into any other containers ; this avoids contact with any other type of sample container, bottles or package materials.
- As with all other samples, do not place the sample bottle cap on any surface when collecting the sample, and avoid all contact with the inside of the sample bottle or its cap.
- When sample is collected and capped, place the sample bottle(s) in an individual sealed plastic bag (e.g. Ziploc®) separate from all other sample parameter bottles, and place in shipping container packed only with ice.

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